

Listing of Claims

The listing of claims presented below replaces all prior versions and listings of claims in the application.

IN THE CLAIMS

Claims 1-10 (Cancel)

Claim 11. (New) A method of screening using wild type fruit fly *Drosophila melanogaster* adults for detecting long-term brain plasticity inducing activities of a chemical agent wherein the steps comprise:

- (a) culturing wild type fruit fly *Drosophila melanogaster* adults in media containing at least one neuroactive drug for about seven days,
- (b) measuring different horizontal and vertical locomotor activities which are distance walked, height climbed, and climbing speed, in flies of step (a),
- (c) identifying a specific alteration in only one of the vertical locomotor activities in the flies of step (b) as characteristic of continuing effect of exposure to the neuroactive drug ,
- (d) continuing chronic exposure of drugs to flies of step (a) for 10 days followed by shifting the flies to drug free media for 30 days,
- (e) measuring horizontal and vertical locomotor activities, as mentioned in step (b), in flies of step (d), and,
- (f) identifying specific alteration in climbing speed, a vertical locomotor activity, in flies of step (e) indicative of withdrawal from the neuroactive drug.

Claim 12. (New) The method of claim 11 wherein the vertical locomotor activity measured in step (c) is height climbed.

Claim 13. (New) The method of claim 11 wherein the vertical locomotor activity measured in step (c) is climbing speed.